STANDARDS CHANGES CATALOG (SCC)

SCC NUMBER: SCC #122

CHANGE PROPOSAL TITLE: Timing model change to the “” DTETURN parameter for 188-220C.

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ORIGINATOR’S INTERNAL NUMBER: NA

AFFECTED DOCUMENT: MIL-STD-188-220C

PRECEDENCE: Routine

RECOMMENDATIONS:

RECORD OF PROCESSING :

DATE:	ACTION:
26 Feb 02	Proposal
8 Apr 02	R0
1 May 02	R1
16 May 02	Work item
6 June 02	R2
27 Aug 02	R3
25 Sep 02	R4/Draft
25 Sep 02	Approved

1. STATEMENT OF THE PROBLEM:

This revision (R1) removes the change proposal for the definition of the DTETURN parameter. The original proposal added a time to rebuild a "220" frame to this parameter. This is wrong.

It was decided by the combat working members that the present definition of the Net Access Delay is correct but the definition of the DTETURN parameter needs to be changed. R2 are the changes for this parameter, which is presented in the alternative solutions. The changes are with paragraph C.3.2.9. The current problems are: The definition of this parameter is wrong and the DTETURN default of 10 milliseconds is too restrictive for this parameter.

The Marine Corps Fire Support architecture will have a mixture (in the near-term) of data modems on the same communication nets; that is the Tacter-31 modem from Tadiran and the SP-TCIM modem from Raytheon. To achieve "reasonable" throughput performance on these networks, these modems need to have the same timing model as defined in Appendix C of MIL-STD-188-220 and use the same Media Access Control (MAC) parameter values.

Moreover, the Net Access Delay (NAD) slots can vary because the various modem implementers have different DTETURN parameters. Different modems on the same radio nets will increase net access collisions. By making the DTETURN variable, different modems could match their NAD slots.

2. PROBLEM ANALYSIS: This revision (R1) removes the change proposal for the definition of the DTETURN parameter. The original proposal added the time to rebuild a "220" frame to this parameter. This is wrong.

3. PROPOSED SOLUTION: Deleted.

4. ALTERNATIVE SOLUTIONS:

The new paragraph C.3.2.9 is the following:

C.3.2.9 DTE turnaround time (DTETURN). DTETURN is the time required for the DTE or modem to stop listening for received data or squelch detect and to activate the radio's PTT. DTETURN shall be a variable parameter where the range shall be from 0 to 100 milliseconds in one (1) millisecond resolution steps. Varying the DTETURN parameter could allow different modems on the same radio net to match their network access delay slots.

Revision 3 added DTETURN to XNP Appendix E. Paragraph E.4.3.3 is now is as follows:

E.4.3.3 Block 3, MAC parameters. MAC parameters defined by Block 3 (Table XXXIII) are required to enable computation of TP, RHD, Net_Busy_Detect_Time, and the NAD described in Appendix C. Although not mandatory with any message, it could lead to erroneous network control computations resulting in collisions if the information is not provided in a Join Request message.

TABLE XXXIII. MAC parameters.

OCTET	FIELD IDENTIFICATION	VALUE
1	Block Number: Identifies specific data block	3
2	Length: Indicates the length of the Hardware Parameters block in octets	23
3-4	Equipment Preamble Time (EPRE): Network Access Control parameter defined in Appendix C.	0 – 30000 msec in 1 msec increments
5-6	Phasing Time: Network Access Control parameter defined in Appendix C.	0 – 10000 msec in 1 msec increments
7-8	Equipment Lag Time (ELAG): Network Access Control parameter defined in Appendix C.	0 – 65534 msec in 1 msec increments
9-10	Turnaround Time (TURN): Network Access Control parameter defined in Appendix C.	0 – 65534 msec in 1 msec increments
11-12	Tolerance Time (TOL): Network Access Control parameter defined in Appendix C.	0 – 2500 msec in 1 msec increments
13-14	DTE Processing Time (DTEPROC): Network Access Control parameter defined in Appendix C.	0 – 65534 msec in 1 msec increments
15	DTE Acknowledgment Time (DTEACK): Network Access Control parameter defined in Appendix C.	0 – 254 msec in 1 msec increments
16	DTE turnaround time (DTETURN): Network Access Control parameter defined in Appendix C.	0 – 100 msec in 1 msec increments
17-18	Net Busy Sensing Time, B: The parameter “B” (data sensing busy detect) used to calculate Net Busy Detect Time (NBDT) defined in Appendix C.	0 – 65534 msec in 1 msec increments

TABLE XXXIII. MAC parameters - Continued.

OCTET	FIELD IDENTIFICATION	VALUE
19-20	Net Busy Detect Time (Squelch Detect): The time to detect network busy using the squelch detection function of SINCGARS.	0 - 65534 msec in 1 msec increments
21-22	Net Busy Detect Time (Non-Squelch Detect): The time to detect data network busy using received data rather than squelch detect.	0 - 65534 msec in 1 msec increments
23	Mode Of Operation: Identifies the Physical Layer protocol capabilities of a specific station or those being used in the network. Multiple bits may be set.	Bit Map: 0 = System Capabilities 1 = Network Operations 2 = Synchronous Mode (SDM) 3 = Synchronous Mode (EDM) 4 = Asynchronous Mode 5 = Packet Mode 6 = Robust Comm. Protocol

5. SYSTEM CHANGES REQUIRED: See above.

6. CONFIGURATION ITEM DOCUMENTATION CHANGES: None.

7. IMPACT ON INTEROPERABILITY: None.

8. IMPACT ON RELATED DOCUMENTS: MIL-STD-188-220C

9. IMPLEMENTATION DATES: TBD.

10. OTHER CONSIDERATIONS: None.

11. REFERENCES: None.

12. TROUBLE REPORTS (TRS) ADDRESSED IN THIS SCC: None.